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CR-136300

December 31, 1973

Mr. Edward W. Crump
Technical Monitor
Code 430
NASA-Goddard Space Flight Center
Greenbelt, Maryland 20771

Dear Ed:

Please accept this letter as our sixth and last ERTS-1 Type I Progress Report for the NASA-funded project entitled, "An Integrated Study of Earth Resources in the State of California Based on ERTS-1 and Supporting Aircraft Data".

Listed below are the titles of the tasks in the project and the names of the co-investigators who are responsible for each task:

REGIONAL AGRICULTURAL SURVEYS USING ERTS-1 DATA (UN640)

Donald T. Lauer, et al (Berkeley Campus)

USE OF ERTS-1 DATA AS AN AID IN SOLVING WATER RESOURCE MANAGEMENT PROBLEMS IN CALIFORNIA (UN643)

Robert H. Burgy, et al (Davis Campus)

ERTS-1 DATA AS AN AID TO RESOURCE MANAGEMENT IN NORTHERN CALIFORNIA (UN257)

Donald T. Lauer, et al (Berkeley Campus)

ANALYSIS OF RIVER MEANDERS FROM ERTS-1 IMAGERY (UN644)

Gerald Schubert, et al (Los Angeles Campus)

USE OF ERTS-1 DATA TO ASSESS AND MONITOR CHANGE IN THE WEST SIDE OF THE SAN JOAQUIN VALLEY AND CENTRAL COASTAL ZONE OF CALIFORNIA (UN070)

John E. Estes, et al (Santa Barbara Campus)

USE OF ERTS-1 DATA TO ASSESS AND MONITOR CHANGE IN THE SOUTHERN CALIFORNIA ENVIRONMENT (UN314)

Leonard W. Bowden, et al (Riverside Campus)

DIGITAL HANDLING AND PROCESSING OF ERTS-1 DATA (UN645)

Vidal Algazi, et al (Davis and Berkeley Campuses)

USE OF ERTS-1 DATA IN THE EDUCATIONAL AND APPLIED RESEARCH PROGRAMS OF THE AGRICULTURAL EXTENSION SERVICE (UN326)

William E. Wildman (Davis Campus)

USE OF ERTS-1 DATA IN IDENTIFICATION, CLASSIFICATION, AND MAPPING OF SALT AFFECTED SOILS IN CALIFORNIA (UN327)

Gordon L. Huntington (Davis Campus)

During this last reporting period, emphasis has been placed on completing each study listed above and reporting research results in a manner which expresses in meaningful quantitative terms, the capability of identifying and mapping significant earth resource features by means of manual and automatic analysis of ERTS-1 data. For example, several demonstration or quasi-operational studies have been performed which assess such factors as (1) the ground data and aircraft underflight requirements and (2) the efficiency of the sampling design that is required for operational use of ERTS-1 data. In addition, where possible, estimates of the benefits of the application of ERTS-1 data have been made in quantitative terms.

The significant results of all studies performed during the contract period will be fully documented in our Type 3 report, which will be submitted for review on January 15, 1974.

Seven published papers based on our study have been released during the period covered by this report. Three of the papers were presented at the symposium on "The Application of Remote Sensing of Arid Land Resources and Environment" held at the University of Arizona, Tucson, Arizona on November 14, 15 and 16, 1973. The papers were (1) "Application of ERTS-1 Pre-Enhanced Imagery for Arid Land Recreation Planning", by Charles Hutchinson and James Huning, (2) "Remote Sensing of Arid Environments: Contrasts and Conflicts in Studying Baja and Alta California" by Leonard Bowden, and (3) "Estimates of Irrigated Water Demands from Remote Sensing" by Claude Johnson.

Also, four papers were presented at the Third ERTS Symposium held in Washington, D. C., on December 10-14, 1973. The papers were (1) "Multispectral Combination and Display of ERTS-1 Data" by V. R. Algazi, (2) "Practical Applications of the Use of ERTS-1 Satellite Imagery for Land Use Mapping and Resource Inventories in the Central Coastal Region of California" by J. E. Estes, et al, (3) "Regional Agricultural Surveys Using ERTS-1 Data" by W. C. Draeger, et al, and (4) "A Timber Inventory Based Upon Manual and Automated Analysis of ERTS-1 and Supporting Aircraft Data Using Multistage Probability Sampling", by J. D. Nichols, et al.

The seven papers listed above will be published as part of the proceedings of the respective conferences.

In addition, at the NASA-sponsored Discipline Panel Reviews held at Goddard Space Flight Center during the week of October 22-26, seven presentations were given by various participants in our project.

No retrospect orders and no standing order changes were made during the period covered by this report.

Sincerely,

Robert N. Colwell

Robert N. Colwell
Principal Investigator

RNC:jef

cc: Mr. I. G. Poppoff, Scientific Monitor, NASA-Ames
Mr. Herb Blodgett, Scientific Monitor, NASA-GSFS
Mr. J. H. Boeckel, NASA-GSFS (2 copies)
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